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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/765,578	01/22/2001	Hideki Okada	SON- 1996	6632

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EXAMINER
HARPER, HOLLY R

ART UNIT	PAPER NUMBER
2879	

DATE MAILED: 08/08/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/765,578	Applicant(s) OKADA ET AL.
	Examiner Holly R. Harper	Art Unit 2879

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____ .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-10* is/are pending in the application.

4a) Of the above claim(s) *2* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1 and 3-10* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1, 3, and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Meglio et al. (USPN 5,877,583) hereinafter "Meglio" in view of Hodges (USPN 4,755,868) in further view of Lascar et al. (USPN 4,896,816) hereinafter "Lascar".

In regard to claim 1, the Meglio reference discloses a cathode ray tube with a liquid cooling system (Column 1, Lines 4-5). The cooling system has an opening so that the cooling liquid makes contact with the panel through the opening (Figure 1). Meglio does not disclose the structural limitations of the cathode ray tube. Hodges discloses a CRT panel with a concave phosphor surface (Column 3, Lines 49-52) with uniform thickness (Column 4, Line 51). A concave phosphor surface will positively affect the shape of the energy distribution function of the area excited by an electron beam (Column 3, Lines 36-38) and the overall distribution of energy produced by the CRT (Column 3, Lines 63-64). A uniform thickness of the panel is desired to keep the energy distribution generated by the phosphor steady (Column 4, Lines 62-64). It would have been obvious to one of ordinary skill in the art at the time the invention was made to create a CRT panel with a concave phosphor surface and uniform thickness, as taught by Hodges, to create a uniform dispersion of light from the faceplate.

The Meglio reference discloses a cooling system for a CRT (Column 3, Lines 48-52), but does not specify how it is attached to the front surface of the CRT panel. It is intrinsically disclosed that a sealing member is used between the cooling system and the CRT. The Lascar reference discloses the sealing of two solid surfaces that are polished and clean (Column 1, Lines 25-28). The area to be sealed is polished to allow a clean, smooth surface with fewer foreign particles to interfere with the seal. It would have been obvious to one of ordinary skill in the art at the time the invention was made to polish the surface of the panel beneath the sealing member, as taught by Lascar, to reduce the impurity of the sealing bond.

In regard to claim 3, claim 3 discloses that polishing is performed using an abrasive containing cerium oxide. The Examiner notes that the method of forming the device is not germane to the issue of patentability of the device itself. Therefore, this limitation has not been given patentable weight.

In regard to claim 4, the Meglio reference discloses a cooling system mounted on the front panel of a CRT. The peripheral portion of the outer surface of the panel is a planar surface (Figure 1).

3. Claims 5 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Meglio and Hodges as applied to claim 1 above and in view of Hasegawa (USPN 4,780,640)

In regard to claims 5 and 6, the Meglio reference discloses a cooling system for a CRT (Column 3, Lines 48-52), but does not specify how it is attached to the front surface of the CRT panel. The Hasegawa reference teaches that a silicon group adhesive agent is used to seal the CRT and the glass plate (Column 1, Line 21). An adhesive has strong bonding properties and would provide a strong seal. It would have been obvious to one of ordinary skill in the art at the

time the invention was made to make the sealing member between the panel and the cooling system from a silicon group adhesive, as taught by Hasegawa, to improve the quality of the seal.

4. Claims 7 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Meglio and Hodges as applied to claim 1 above and in view of Lee (USPN 6,188,165).

The Meglio reference discloses that the cooling system has a second opening blocked by a lens (Column 1, Line 21 and Figure 1, Element 18), but does not teach that an o-ring is used to mount the lens to the cooling system. The Lee reference teaches that a rubber ring (o-ring) is used to form a seal between the lens and the coupler (Column 1, Lines 26-29 and Figure 1, Element 24). An o-ring provides a resilient, airtight, and waterproof seal. It would have been obvious to one of ordinary skill in the art at the time the invention was made to make the sealing member between the lens and the cooling system from an o-ring, as taught by Lee, to improve the quality of the seal.

5. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Meglio and Hodges as applied to claim 1 above and in view of Inaida et al. (USPN 4,740,727) hereinafter "Inaida."

In regard to claim 9, the Meglio reference discloses that the liquid coolant may be clear (Column 1, Line 17), but it does not describe the refractive index of the liquid or the panel. The Inaida reference teaches that the refractive indices of the front panel, lens, and cooling medium are approximately equal to each other. This makes it possible to obtain optical images of a high luminance and a high contrast ratio (Column 6, Lines 18-25). It would have been obvious to one of ordinary skill in the art at the time the invention was made to choose materials for the cooling

system and CRT so that the refractive indices are substantially equal, as taught by Inaida, to improve the luminance and contrast ratio.

6. Claim 10 rejected under 35 U.S.C. 103(a) as being unpatentable over Meglio and Hodges and Inaida as applied to claims 1 and 9 above in view of Kataoka et al. (USPN 4,924,244) hereinafter "Kataoka."

The Meglio and Inaida references disclose the use of liquid coolant, but do not disclose the particular liquids used to make the coolant. The Kataoka reference teaches that a refrigerant can be made from a combination of ethylene glycol and glycerol. The coolant is used to prevent the increase in temperature of the fluorescent screen of the CRT (Column 4, Lines 63-65). It would have been obvious to one of ordinary skill in the art at the time the invention was made to create a liquid coolant using ethylene glycol and glycerol, as taught by Kataoka, to keep the temperature of the fluorescent screen from increasing.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Hasegawa (USPN 4,737,678) discloses a CRT with a cooling system and a sealing member.

Response to Arguments

8. Regarding applicants claim that the structural limitation of a sealing member is not specified in the rejection, the examiner respectfully agrees. Meglio discloses that the cooling

system is attached to the CRT. Attach implies to make fast. Therefore, Meglio intrinsically discloses that a sealing member is present between the cooling system and the CRT.

9. Regarding applicants claim that Lascar does not constitute analogous art, examiner respectfully disagrees. Lascar is analogous in the art of creating a seal, as applies to claim 1. The Lascar reference teaches forming an adhesive bond between two solid structures that are polished and cleaned.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Holly Harper whose telephone number is (703) 305-7908. The examiner can normally be reached on Monday-Friday from 8:30 AM to 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimesh Patel, can be reached on (703) 305-4794. The fax phone number for the organization where this application or proceeding is assigned is (703) 308-7382.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

Holly Harper
Patent Examiner
Art Unit 2879

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